

§ 431.87

10 CFR Ch. II (1–13 Edition)

(ii) *Thermal Efficiency.* Use the calculation procedure for the thermal efficiency test specified in Section 11.1 of the HI BTS–2000, Rev 06.07 (incorporated by reference, *see* § 431.85).

[74 FR 36354, July 22, 2009]

ENERGY EFFICIENCY STANDARDS

§ 431.87 Energy conservation standards and their effective dates.

(a) Each commercial packaged boiler manufactured on or after January 1, 1994, and before March 2, 2012, must meet the following energy efficiency standard levels:

(1) For a gas-fired packaged boiler with a capacity (rated maximum input)

of 300,000 Btu/h or more, the combustion efficiency at the maximum rated capacity must be not less than 80 percent.

(2) For an oil-fired packaged boiler with a capacity (rated maximum input) of 300,000 Btu/h or more, the combustion efficiency at the maximum rated capacity must be not less than 83 percent.

(b) Each commercial packaged boiler listed in Table 1 to § 431.87 and manufactured on or after the effective date listed in Table 1 of this section, must meet the applicable energy conservation standard in Table 1.

TABLE 1 TO § 431.87—COMMERCIAL PACKAGED BOILER ENERGY CONSERVATION STANDARDS

Equipment type	Subcategory	Size category (input)	Efficiency level—Effective date: March 2, 2012 *
Hot Water Commercial Packaged Boilers ...	Gas-fired	≥300,000 Btu/h and ≤2,500,000 Btu/h.	80.0% E _T
Hot Water Commercial Packaged Boilers ...	Gas-fired	>2,500,000 Btu/h	82.0% E _C
Hot Water Commercial Packaged Boilers ...	Oil-fired	≥300,000 Btu/h and ≤2,500,000 Btu/h.	82.0% E _T
Hot Water Commercial Packaged Boilers ...	Oil-fired	>2,500,000 Btu/h	84.0% E _C
Steam Commercial Packaged Boilers	Gas-fired—all, except natural draft	≥300,000 Btu/h and ≤2,500,000 Btu/h.	79.0% E _T
Steam Commercial Packaged Boilers	Gas-fired—all, except natural draft	>2,500,000 Btu/h	79.0% E _T
Steam Commercial Packaged Boilers	Gas-fired—natural draft	≥300,000 Btu/h and ≤2,500,000 Btu/h.	77.0% E _T
Steam Commercial Packaged Boilers	Gas-fired—natural draft	>2,500,000 Btu/h	77.0% E _T
Steam Commercial Packaged Boilers	Oil-fired	≥300,000 Btu/h and ≤2,500,000 Btu/h.	81.0% E _T
Steam Commercial Packaged Boilers	Oil-fired	>2,500,000 Btu/h	81.0% E _T

*Where E_C is combustion efficiency and E_T is thermal efficiency as defined in § 431.82.

(c) Each commercial packaged boiler listed in Table 2 to § 431.87 and manufactured on or after the effective date

listed in Table 2 of this section, must meet the applicable energy conservation standard in Table 2.

TABLE 2 TO § 431.87—COMMERCIAL PACKAGED BOILER ENERGY CONSERVATION STANDARDS

Equipment type	Subcategory	Size category (input)	Efficiency level—Effective date: March 2, 2022 *
Steam Commercial Packaged Boilers ...	Gas-fired—natural draft	≥300,000 Btu/h and ≤2,500,000 Btu/h	79.0% E _T
Steam Commercial Packaged Boilers ...	Gas-fired—natural draft	>2,500,000 Btu/h	79.0% E _T

*Where E_C is combustion efficiency and E_T is thermal efficiency as defined in § 431.82.

[74 FR 36355, July 22, 2009]

Subpart F—Commercial Air Conditioners and Heat Pumps

SOURCE: 69 FR 61969, Oct. 21, 2004, unless otherwise noted.

§ 431.91 Purpose and scope.

This subpart specifies test procedures and energy conservation standards for certain commercial air conditioners and heat pumps, pursuant to Part C of

Department of Energy

§ 431.92

Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311–6317.

[69 FR 61969, Oct. 21, 2004, as amended at 70 FR 60415, Oct. 18, 2005]

§ 431.92 Definitions concerning commercial air conditioners and heat pumps.

The following definitions apply for purposes of this subpart F, and of subparts J through M of this part. Any words or terms not defined in this section or elsewhere in this part shall be defined as provided in 42 U.S.C. 6311.

Basic model means all units of a given type of covered product (or class thereof) manufactured by one manufacturer, having the same primary energy source, and which have essentially identical electrical, physical, and functional (or hydraulic) characteristics that affect energy consumption, energy efficiency, water consumption, or water efficiency.

Coefficient of Performance, or COP means the ratio of the produced cooling effect of an air conditioner or heat pump (or its produced heating effect, depending on the mode of operation) to its net work input, when both the cooling (or heating) effect and the net work input are expressed in identical units of measurement.

Commercial package air-conditioning and heating equipment means air-cooled, water-cooled, evaporatively-cooled, or water source (not including ground water source) electrically operated, unitary central air conditioners and central air-conditioning heat pumps for commercial application.

Computer Room Air Conditioner means a basic model of commercial package air-conditioning and heating equipment (packaged or split) that is: Used in computer rooms, data processing rooms, or other information technology cooling applications; rated for sensible coefficient of performance (SCOP) and tested in accordance with 10 CFR 431.96, and is not a covered consumer product under 42 U.S.C. 6291(1)–(2) and 6292. A computer room air conditioner may be provided with, or have as available options, an integrated humidifier, temperature, and/or humidity control of the supplied air, and reheating function.

Energy Efficiency Ratio, or EER means the ratio of the produced cooling effect of an air conditioner or heat pump to its net work input, expressed in Btu/watt-hour.

Heat Recovery (in the context of variable refrigerant flow multi-split air conditioners or variable refrigerant flow multi-split heat pumps) means that the air conditioner or heat pump is also capable of providing simultaneous heating and cooling operation, where recovered energy from the indoor units operating in one mode can be transferred to one or more other indoor units operating in the other mode. A variable refrigerant flow multi-split heat recovery heat pump is a variable refrigerant flow multi-split heat pump with the addition of heat recovery capability.

Heating seasonal performance factor, or HSPF means the total heating output of a central air-conditioning heat pump during its normal annual usage period for heating, expressed in Btu's and divided by the total electric power input, expressed in watt-hours, during the same period.

Large commercial package air-conditioning and heating equipment means commercial package air-conditioning and heating equipment that is rated—

- (1) At or above 135,000 Btu per hour; and
- (2) Below 240,000 Btu per hour (cooling capacity).

Non-standard size means a packaged terminal air conditioner or packaged terminal heat pump with existing wall sleeve dimensions having an external wall opening of less than 16 inches high or less than 42 inches wide, and a cross-sectional area less than 670 square inches.

Packaged terminal air conditioner means a wall sleeve and a separate unencased combination of heating and cooling assemblies specified by the builder and intended for mounting through the wall, and that is industrial equipment. It includes a prime source of refrigeration, separable outdoor louvers, forced ventilation, and heating availability by builder's choice of hot water, steam, or electricity.

Packaged terminal heat pump means a packaged terminal air conditioner that utilizes reverse cycle refrigeration as